

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of Docket No: Q96256  
Yoshihide KAWAGUCHI, et al.  
Appln. No.: 10/587,842 Group Art Unit: 1756  
Confirmation No.: 2299 Examiner: Not yet assigned  
Filed: July 28, 2006  
For: OPTICAL REFRACTIVE INDEX-MODIFYING POLYMER COMPOSITION, HOLOGRAM RECORDING MATERIAL AND METHOD OF CONTROLLING REFRACTIVE INDEX

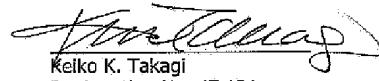
**SUBMISSION OF ENGLISH TRANSLATION OF THE PRELIMINARY REPORT ON  
PATENTABILITY**

**MAIL STOP AMENDMENT**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of an English translation of the International Preliminary Report on Patentability dated July 19, 2007, for the above-identified application. It is noted that the four (4) references cited in the Report were previously listed on the PTO/SB/08 form submitted with the Information Disclosure Statement filed in the U.S. Patent and Trademark Office on July 28, 2006.

Respectfully submitted,



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WASHINGTON DC SUGHRUE165580

**65565**

CUSTOMER NUMBER

Date: August 9, 2007

PATENT COOPERATION TREATY

PCT/JP2006/300085

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION CONCERNING  
TRANSMITTAL OF COPY OF INTERNATIONAL  
PRELIMINARY REPORT ON PATENTABILITY  
(CHAPTER I OF THE PATENT COOPERATION  
TREATY)  
(PCT Rule 44bis.1(c))

Date of mailing (day/month/year) 19 July 2007 (19.07.2007)	IMPORTANT NOTICE	
Applicant's or agent's file reference F1821WO 1204423		
International application No. PCT/JP2006/300085	International filing date (day/month/year) 06 January 2006 (06.01.2006)	Priority date (day/month/year) 07 January 2005 (07.01.2005)
Applicant	NITTO DENKO CORPORATION et al	

To:

NAITO, Teruo  
Shin-ei Patent Office  
7-13, Nishi-Shimbashi 1-chome  
Minato-ku, Tokyo 1050003  
JAPON

**RECEIVED**  
**07.7.26**  
**SHIN-EI**  
**PATENT OFFICE**

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Masashi Honda
Faxsimile No. +41 22 338 82 70	e-mail: p108.pct@wipo.int

Form PCT/IB/326 (January 2004)

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>F1821WO</b>	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. <b>PCT/JP2006/300085</b>	International filing date (day/month/year) <b>06 January 2006 (06.01.2006)</b>	Priority date (day/month/year) <b>07 January 2005 (07.01.2005)</b>	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant <b>NITTO DENKO CORPORATION</b>			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

Date of issuance of this report <b>10 July 2007 (10.07.2007)</b>
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Authorized officer
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<b>Masashi Honda</b>
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e-mail: <a href="mailto:pr08.pct@wipo.int">pr08.pct@wipo.int</a>
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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland
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Facsimile No. +41 22 338 82 70

Form PCT/IB/373 (January 2004)

**PATENT COOPERATION TREATY**

PCT/JP2006/300085

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:	
NAITO, Teruo Shin-ei Patent Office 7-18, Nishi-Shimbashi 1-chome Minato-ku, Tokyo 1050003 JAPON	
	

Date of mailing (day/month/year) 19 July 2007 (19.07.2007)	
Applicant's or agent's file reference F1821WO	<b>IMPORTANT NOTIFICATION</b>
International application No. PCT/JP2006/300085	International filing date (day/month/year) 06 January 2006 (06.01.2006)
Applicant NITTO DENKO CORPORATION et.al	

**1. Transmittal of the translation to the applicant.**



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer <b>Masashi Honda</b>
Facsimile No. +41 22 338 82 70	e-mail: p108.pct@wipo.int

Form PCT/IB/338 (January 2004)

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**TRANSLATION**  
**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43b/s.1)

<p>To:</p> <div style="border: 1px solid black; height: 100px; margin-top: 10px;"></div>	<p align="center"><b>FOR FURTHER ACTION</b></p> <p align="center">See paragraph 2 below</p>																	
<p>Date of mailing (day/month/year)</p>																		
<p>Applicant's or agent's file reference</p> <p><b>F1821WO</b></p>	<p>International filing date (day/month/year)</p> <p><b>06.01.2006</b></p>	<p>Priority date (day/month/year)</p> <p><b>07.01.2005</b></p>																
<p>International Patent Classification (IPC) or both national classification and IPC</p> <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>																		
<p>Applicant</p> <p><b>NITTO DENKO CORPORATION</b></p>																		
<p>1. This opinion contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> <td style="width: 85%; padding: 2px;">Box No. I Basis of the opinion</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. II Priority</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. IV Lack of unity of invention</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;">Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. VI Certain documents cited</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. VII Certain defects in the international application</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;">Box No. VIII Certain observations on the international application</td> </tr> </table>			<input checked="" type="checkbox"/>	Box No. I Basis of the opinion	<input type="checkbox"/>	Box No. II Priority	<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI Certain documents cited	<input type="checkbox"/>	Box No. VII Certain defects in the international application	<input type="checkbox"/>	Box No. VIII Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII Certain observations on the international application																	
<p>2. <b>FURTHER ACTION</b></p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than that one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1(b)(b) that written opinions of the International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p>																		
<p>3. For further details, see notes to Form PCT/ISA/220.</p>																		
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 2px;">Name and mailing address of the ISA/JP</td> <td style="width: 33%; padding: 2px;">Date of completion of this opinion</td> <td style="width: 33%; padding: 2px;">Authorized officer</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Facsimile No.</td> <td style="text-align: center; padding: 2px;">Telephone No.</td> <td style="text-align: center; padding: 2px;"></td> </tr> </table>			Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer	Facsimile No.	Telephone No.											
Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer																
Facsimile No.	Telephone No.																	

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
**PCT/JP2006/300085**

Box No. I	Basis of this opinion
<p>1. With regard to the language, this opinion has been established on the basis of:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> the translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).</p> <p>2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> on paper</p> <p><input type="checkbox"/> in electronic form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed</p> <p><input type="checkbox"/> filed together with the international application in electronic form</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search</p> <p>3. <input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p> <p>4. Additional comments:</p>	

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY		International application No. PCT/JP2006/300085
Box No. V	Reasoned statement under Rule 43bis.1(a)(3) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
1. Statement		
Novelty (N)	Claims	1-10
	Claims	_____
Inventive step (SI)	Claims	1-10
	Claims	_____
Industrial applicability (IA)	Claims	1-10
	Claims	_____
2. Citations and explanations:		
<p>The subject matters of claims 1-10 appear to be novel and to involve an inventive step, since they are not disclosed in any of the documents cited in the ISR.</p> <p>Especially, none of a photorefractive index modulating polymer composition characterized by being composed of, as a main component, polymer (A) being a polymer of monomers containing as an essential component an acryl/vinyl monomer of the formula (1)</p> $\text{CH}_2=\text{C}(\text{R}^1)-\text{C}(=\text{O})\text{O}-\text{R}^2=\text{CH}_2$ <p>(wherein R<sup>1</sup> is a hydrogen atom or methyl, and R<sup>2</sup> is a C<sub>1</sub>-C<sub>20</sub> saturated or unsaturated hydrocarbon group that may contain a heteroatom or halogen atom in the molecule thereof) in which in the molecule thereof, there remain side chain vinyl groups capable of radical polymerization and, per 100 pts.wt. of polymer (A), 5 to 60 pts.wt. of thermosetting polymer (B); a hologram recording material comprising said composition; and a method of refractive index control utilizing said composition, are disclosed in any of the cited documents.</p>		
<p>&lt;Prior art documents&gt;</p> <p>JP, 2003-147017, A (Fuji Photo Film Co., Ltd.), 21 May, 2003 (21.05.03)      JP, 9-230594, A (Fuji Photo Film Co., Ltd.), 05 September, 1997 (05.09.97)      JP, 9-106240, A (Toyo Ink Manufacturing Co., Ltd.), 22 April, 1997 (22.04.97)      JP, 7-70399, A (Daicel Chemical Industries, Ltd.), 14 March, 1995 (14.03.95)</p>		